UGP crews perform chilling task in Jamestown

Western maintenance and construction personnel are on the job no matter what the weather. Even when it's 20 degrees below zero, Western crews work to provide customers with reliable service. Frigid temperatures and extreme winds combine to create wind chills of 60 degrees below zero for some Western crews.

North Dakota Maintenance Office electricians and line crews originally planned to install a 40-MVAR capacitor bank at Jamestown Substation in Spring 2001. The weather would have been fair then.

Those plans changed when approximately 10 miles of Great River Energy's 230-kV wood transmission line near Devil's Lake was destroyed by high winds last August. The loss of the line caused a low-voltage problem in eastern North Dakota. UGP Transmission System Planning Manager **Ed Weber** explained, "In early December UGP's Transmission System Planning group, in cooperation with other affected utilities, recommended our regional maintenance forces install a 40-MVAR capacitor as quickly as possible."

Construction forces installed concrete foundations for the capacitor bank in November. With sub-zero weather starting Dec. 7, and predicted load problems, crews urgently installed a temporary wood structure and jumpers in an effort to get that capacitor bank on line. Crews worked all day Friday and Saturday to accomplish the job with fierce winds and temperatures plummeting to 20 degrees below zero.

Over the weekend, capacitors began failing and the bank had to be removed from service. Initial repairs were completed, and the capacitor bank was again energized. The capacitors failed again and were removed from service. NDMO personnel are working with the manufacturer to determine the cause of the problem.

During this same period, power system studies determined that a second 40-MVAR bank was needed to provide voltage stability. Construction personnel installed concrete foundations for the second bank the week of Dec. 26. In rain, freezing rain and more than six inches of snow with 30 mile-per-hour winds, NDMO crews completed installation of bus structures, circuit breakers, disconnect switches and current limiting reactors in early January. Both capacitor banks will be energized next week.

As a result of UGP team efforts, eastern North Dakota customers will receive more reliable electrical service. UGP maintenance crews and construction personnel are commended for their efforts and responsiveness in accomplishing critical tasks under such bone-chilling circumstances.

UGP employees involved in Jamestown capacitor project:

From Bismarck: **Jim Koehn,** electrician foremen and project field lead; **Lyle Wolski,** lead field electrical engineer; Electricians **Wayne Stevens, Bernie Anderson, Bob Betchner, Harlen Hanson, Don Schuette** and **Ron Schulz;** Linemen **Scott Scholl, Bob Miller, Francis Bruce, Don Colis** and **Mark Dockter;** and Warehouseman **Jim Senger.**

From Huron: Electrical Engineers **Wade Berg, Randy Diede** and **Devin Bhan;** and Maintenance Manager **Stan Gliko.**

From Jamestown: Linemen **Dennis Coleman, B.J. Breske, Randy Jorgenson** and **Bob Schilling.**

*UGP personnel construct a 40-MVAR capacitor bank in chilling temperatures at the Jamestown Substation near Devil's Lake in North Dakota. North Dakota Maintenance Office electricians and line crews completed the work in frigid temperatures with winds gusting to 30 miles per hour creating wind chills in excess of 60 degrees below zero. (Photo by **Brian Morris**)*

*UGP crews at work on 40-MVAR capacitor banks in temperatures plummeting to 60 degrees below zero. (Photo by **Brian Morris**)*